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ABSTRACT

The effects of participation in school-to-career (STC) on subsequent educational and career opportunities were examined in a longitudinal study of 1999 and 2000 graduates of the Lansing Area Manufacturing Partnership (LAMP), which is an STC program sponsored by the United Auto Workers, General Motors Corporation, and Michigan's Ingham County Intermediate School District. Mail surveys and telephone interviews were administered to 208 students (104 in the STC sample and 104 in the non-STC sample). A total of 195 students (101 STC-sample members and 94 non-STC sample members) completed the first-round and follow-up interviews, resulting in a response rate of 93.8%. Participation in the LAMP STC did not appear to limit the respondents' career or educational aspirations. Two-year colleges were the destination of choice for most graduates from both groups, and similar proportions of both groups were enrolled in four-year colleges. The STC participants were nearly four times as likely as the nonparticipants to have career goals relating to the automotive industry, although most graduates from both samples aspired to become professionals. Only 13% of the STC sample members were employed at the sponsoring company after graduation. Regardless of whether the STC graduates pursued further education or entered the world of work, they considered the STC program beneficial in making their postgraduation transitions and decisions. (Contains 30 references.) (MN)

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Does Participation in School-to-Career Limit Students' Educational and Career Options?

Findings from the LAMP Longitudinal Study

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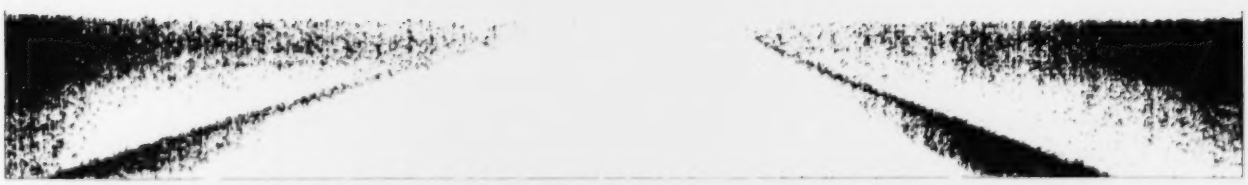

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Does Participation in School-to-Career Limit Students' Educational and Career Opportunities?

Findings from the LAMP Longitudinal Study

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Does Participation in School-to-Career Limit Students' Educational and Career Opportunities?

Abstract

School-to-career (STC) programs have been criticized for steering participants into a one-track career path and narrowing their scope of educational possibilities. On the other hand, STC programs have been touted for their positive influence on preparing students for the challenges and responsibilities of the workplace. Little empirical evidence, however, has been put forth to gauge the positive/negative effects of STC program participation with respect to career plans, educational trajectories, and labor force attachment post-high school. This paper examines graduates of the Lansing Area Manufacturing Partnership (LAMP), a manufacturing-focused STC program, alongside a matched comparison group in order to detect similarities and differences in their post-high school lives.

Analyses found that LAMP graduates are more likely to work in and have career goals that are aligned with the STC program sponsor, yet they have higher post-secondary enrollment rates, greater educational expectations, and are better prepared for the transition to young adulthood. Most importantly, program participation does not compromise career goals.

Does Participation in School-to-Career Limit Students' Educational and Career Opportunities?

Maintaining the principle of equality of opportunity for students while simultaneously preparing them for the challenges of adult life has remained at the heart of the debate over the role of career development and career training in the American education system. This tension remains of concern as educational policy makers evaluate the legacy of the School-to-Work Opportunities Act of 1994 (STWOA) which, unlike traditional vocational initiatives that have historically targeted the non-college bound, sought to build partnerships between schools and local businesses to provide work-based learning for all students (U.S. 103rd Congress, 1994).

Those who support legislation along the lines of the STWOA assert that it is necessary for schools to equip students for the situations and tasks they will face in the adult work force (Lewis, 1997; National School-to-Work Learning and Information Center, 1999). Opponents, on the other hand, argue that such policies serve the interests of business over students and consequently hinder students from establishing personal career trajectories (Lewis, Stone, Shipley, and Madzar, 1998; Miller, 2001; Patterson, 1999).

Although inquiries on the transition to young adulthood have looked at the role of traditional vocational education in youth development (Arum & Shavit, 1995; Kerckhoff & Bell, 1998), little empirical evidence has been put forth that critically examines the influence of participation in a school-to-career (STC) program on career plans, educational trajectories, and labor force attachment post-high school graduation. In this paper, we examine graduates of the Lansing Area Manufacturing Partnership (LAMP), a manufacturing-focused STC initiative, alongside a comparison group to see if and how their career plans and post-high school lives differ.

THE SCHOOL-TO-CAREER DEBATE

Proponents of the school-to-career movement maintain that the skills and values required by employers need to be integrated into the agenda and practices of the standard school curriculum so that upon graduation, students will be able to successfully transition into and advance within the labor force. Indeed, this pragmatic orientation towards education was an impetus for education policy reform within the past two decades. One of the most influential

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pieces in the debate was the frequently cited *A Nation at Risk* report (National Commission on Excellence in Education, 1983), which blamed public education for failing to prepare students for higher education and the workforce and consequently doing harm to the United States' economic eminence.

This indictment of America's schools sent education policy makers down a split path. The first wave of reform stressed a 'back to the basics' agenda with an emphasis on college preparatory English, math, and science (Lewis et al., 1998). This movement was by and large focused on helping the already college bound sharpen their skills to compete in a global economy in which the U.S. was losing ground. The second wave of reforms, driven in part by reports such as *The Neglected Majority* (Parnell, 1985), was geared more towards the non-college bound population (Lewis et al., 1998). For them, gaining the skills required by employers, rather than a college focused curriculum, was necessary for a smooth transition into the workforce. The integration of workforce skills into traditional academic courses for both college bound and non-college bound youth became increasingly viewed as vital to the health of the domestic economy.

The Secretary's Commission on Achieving Necessary Skills (SCANS) helped propel the idea of workforce development in the classroom by compiling a list of skills most desired by major U.S. employers. SCANS identified two central areas: (1) *foundation skills* such as reading, writing, and math and (2) *workplace competencies* such as time allocation, teamwork, and evaluating and communicating information (U.S. Department of Labor, 1992). The intent was to give schools adequate guidance in integrating workplace competencies into core subject areas that are typically occupied by foundation skill development so that both college bound and non-college bound youth could benefit. It was argued that if the U.S. wanted to maintain its economic competitiveness, it would have to restructure the relationship between education and employment in order to optimize the human capital of *all* youth.

The largest policy response towards the school-workforce mismatch came in the form of the 1994 STWOA which provided nearly $2 billion in seed money to support programs that included internships, career academies, job shadowing, and financial assistance to individual states (Cutshall, 2001; Halperin, 1994). Influenced in part by the SCANS project, the STWOA was premised on school-based learning, work-based learning, and connecting activities in these two areas through school-employer-community partnerships. Unlike traditional vocational

education, programs stemming from this initiative sought to assist *all* students – not just the 'non-college bound' population. Since its inception, the STWOA has helped to establish over 1,200 local STC partnerships including more than 50,000 schools and 244,000 employers (Cutshall, 2001; Medrich, Beltranena, & White, 2001).

Opponents of the policy contend that STC programs serve to reproduce and reinforce inequality in society by forcing students to make hard and fast decisions about their occupational futures while they are still in school (Miller, 2001; Patterson, 1998). Critics of STC, and vocational education more generally, worry that participating in career development programs creates a 'steering effect' in which students' educational and career plans are guided to match the profile of the sponsoring company's employees. By building a curriculum around a set of job specific skills, equality of opportunity that public education is intended to provide is compromised. Since those students who are enrolled in traditional vocational programs are disproportionately racial minorities and/or of lower socioeconomic status (National Center for Education Statistics, 1996; Oakes, 1985), spending time outside of the classroom and in an occupational setting only further validates tracking and denies them crucial educational capital (Lewis et al., 1998). Further, corporate intervention into schools places the content of the curriculum at the mercy of employer needs instead of preparing all students equally for educational and career transitions in general. Some of the most severe criticism contends that school-to-career programs ruin the academic potential of students and removes their autonomy in making choices about their future (Miller, 2001; Patterson, 1998).

In the midst of these claims, the literature on STC, albeit disparate, suggests that students are benefiting from participation (Hershey, Silverberg, and Haimson, 1999; Hughes, Bailey, and Mechur, 2001; Kemple and Snipes, 2000; and MPR Associates, 1998). Past work has shown that students in STC programs have better attendance rates (Bishop, Mane, and Ruiz-Quintilla, 2000), spend more time doing homework (Kelsh, 1998), take more challenging courses (Bishop et al., 2000), and obtain higher GPAs (Hanser and Stasz, 1999), while at the same time are less likely to be suspended from school (JFF, n.d.) or drop out of school (Kemple and Snipes, 2000).

With respect to post-secondary outcomes, a more limited body of research has found that graduates from STC programs are equally, and in some cases more, likely to attend college as other students (Maxwell and Rubin, 2000; Metis Associates, 1999). Some of the most promising results come from an evaluation of a Boston-based STC program which found that its graduates

were more likely to attend college and graduate, find employment, and have higher wages than non-participants (JFF, n.d.).

One of the most comprehensive looks at the impact of the STWOA is Hughes et al. (2001) synthesis of existing research. Across a number of studies designed to evaluate individual programs, they find that STC program participants maintain good grades and are prepared for college and work. Most notable from their review is the absence of negative outcomes; instead, almost all of the inquiries report advantages of participating in this type of program.

Although these previous reports reflect well on STC initiatives, they have yet to tackle the claims that STC tends to limit career choices and educational attainment. Without empirical evidence on the role of STC as 'institutional tracking' or 'general career skill enhancement,' future educational reform will be misguided. Most of the existing literature is situated around evaluations of individual STC initiatives which are often tailored to aspects of a given program and designed to measure short term outcomes. Although the accumulating body of research from individual studies gives credence to the short term benefit of participating in a STC program, we know very little about career plans, career formation, and outcomes post-high school.

Our data, like others, are limited in that our study was designed to assess outcomes of participants in a single STC initiative. However, by making use of standard measures (e.g. post-secondary enrollment status, employment type, etc.) alongside measures that indicate career orientations (e.g. future plans, preparedness), we can better understand the complex relationship between STC program participation, educational and career plans, and the transition to young adulthood. Our intent is *not* to provide a definitive answer as to whether or not STC programs compromise the equality of opportunity principle, but rather to add to the existing body of literature by attempting to answer the following questions:

1) Does participation in a STC program alter individual educational plans?
2) Does participation in a STC program deter educational attainment?
3) Do the career goals of STC participants reflect the industry sponsoring the program?
4) Are graduates of a STC program steered into the company/industry that sponsored it?
5) Are participants of STC programs better prepared than non-participants for the transition to adulthood?

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In so doing, we hope to elevate the discourse on the costs and benefits of participating in a STC program.

METHOD

PARTICIPANTS

This report is based on data collected from all 1999 and 2000 graduates of LAMP, a STC program sponsored by the United Auto Workers, General Motors Corporation, and the Ingham County (Michigan) Intermediate School District. The program is characterized by a career development focus, an academic but business/labor-driven integrated curriculum, an emphasis on project-based learning, and a team teaching structure. We feel that this program is an optimal setting to investigate our research questions for the following reasons: an explicit dimension of LAMP's mission is to prepare students for careers in the automotive manufacturing industry; participants spend half of each school day of their senior year on the property of the sponsoring company; and students have extensive interactions with company employees and personnel. During their tenure in the program, students engage in activities such as a simulated assembly line, manufacturing work stations, and engine tear down. In addition to the manufacturing focus of the STC initiative, the schools themselves are situated in a community with a vested interest in the industry: the most recently available figures indicate that 14.4% of all persons over the age of 16 in the metropolitan area in which they reside are employed in manufacturing (U.S. Bureau of the Census, 1990). If STC programs limit educational and career opportunities, those effects should be most prominent in programs with an intensive industry component. This report examines one such program.

In order to gauge the influence of the program on the participants, we also collected data from a comparison sample. The comparison group was constructed by matching STC participants one-to-one with non-STC participants controlling for gender, race, age, GPA, and high school attended. The comparability of both samples is presented in Table 1.

INSTRUMENTATION

The data used in this analysis are from an ongoing longitudinal project in which members of both groups are contacted twice a year (January and July) and asked to report on such measures as post-secondary enrollment status, degree/credential completion, employment status.

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Table 1
Sample Demographics

	Group	
	STC	Non-STC
Gender		
Female	34.7%	36.2%
Male	65.3%	63.8%
Race/Ethnicity		
African American	11.9%	12.8%
Asian American	3.0%	2.1%
Latino/Hispanic	5.9%	3.2%
White	75.2%	80.9%
Other	4.0%	1.1%
Father's Education		
Some High School or Less	1.0%	4.3%
High School/GED	32.7%	39.4%
Some College	29.7%	16.0%
Associate's Degree	9.9%	7.4%
Bachelor's Degree	16.8%	21.3%
Graduate Degree	5.0%	11.7%
Don't know/ Not Applicable	5.0%	0.0%
Graduation Year		
1999	47.5%	48.9%
2000	52.5%	51.1%
Senior Year GPA	3.25	3.31
Sample Size	101	94

Note. Percentages may not round to 100 due to rounding error or missing data.

job satisfaction, and career goals. The data are gathered through both mailed surveys and telephone interviews. Our original sample consisted of 208 students: 104 STC participants and 104 non-STC participants. We were able to retain 101 of the STC participants and 94 of the non- STC participants – resulting in a response rate of 93.8%. For this analysis, we used items asked of the respondents in the base-line interview and the first follow-up interview. The base-

line interview, which was conducted at the conclusion of the respondents' senior year, collected information on educational goals, career plans, and demographic background. The first follow-up interview, conducted six months after graduation, collected information on actual activities related to educational and employment status.

PROCEDURE

Due to the nature of the LAMP initiative, random assignment to either a treatment group or a control group was not possible. Consequently, we cannot employ inferential statistics. Instead we use descriptive statistics and paired sample hypothesis tests to examine both differences and similarities between the two samples.

RESULTS

Does participation in a STC program alter individual plans for educational attainment?

If a STC program influenced the career decisions of its participants, we would expect that to be reflected in their plans for further education. Specifically, if involvement in a program conditioned its participants to strongly consider an occupational future in the industry of the sponsor, then the bulk of the students should plan on attaining the level of education necessary for employment in that industry. In the case of the automotive manufacturing industry, the academic credential traditionally necessary for an entry-level position is either a high school diploma or a technical/trade school certificate.[1] If STC programs track students into the occupation of the sponsor, as STC opponents claim, we would anticipate that program participants would tend to report either a high school diploma or a technical/trade school certificate as their educational destination. In order to test this, we analyzed a question from the baseline survey which asked students the highest level of education they plan to complete. Results from this question are presented in Table 2.

If the STC program served to deter plans for higher education, it is not evidenced in our data. Comparable proportions of both samples planned to attain a high school diploma or a technical/trade school certificate. Additionally, the proportions in these categories are small: only 4% of the STC sample and 6.4% of the non-STC sample planned on attaining the minimum degree requirements for an automotive manufacturing position. A slightly higher percentage of non-STC graduates expected to receive a bachelor's degree while more STC graduates planned

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Table 2
Plans for Educational Attainment

	Group	
	STC	Non-STC
High School Diploma	2.0%	4.3%
Technical/Trade Certificate	2.0%	2.1%
Associate's Degree	16.3%	16.0%
Bachelor's Degree	41.8%	50.0%
Master's Degree	30.6%	22.3%
Doctorate	6.1%	5.3%
n	98	94

on acquiring graduate degrees. If anything, these numbers indicate that STC graduates have somewhat higher educational expectations than the comparison group. There are no signs that participation in the STC program stifled the educational plans of its participants.

Does participation in a STC program deter educational attainment?

While we find no evidence that participants of the STC program had lower educational expectations than the comparison group, the question still remains whether or not the actual educational trajectories of the graduates conform to the pathway prescribed by the industry of the program sponsor. Although students had a chance to participate in different facets of the automotive business throughout the program (e.g. design, labor relations, lean production), they were primarily engaged in activities that directly related to manufacturing production. As mentioned in the preceding section, most entry-level positions in the manufacturing sector of the company require a high school diploma or a technical/trade school certificate. If the manufacturing focus of the program had steered participants away from achieving higher educational credentials, we would expect that there would be greater proportions of STC graduates either enrolled in a technical/trade school program or not enrolled in a post-secondary institution at all. If participation did not have the 'steering' effect, we would expect few differences between the groups with respect to enrollment patterns. To answer this question, we analyzed a question that asked respondents about their enrollment status six months after high school graduation. Results are presented in Table 3.

Table 3
Educational Enrollment Status;
Six Months After High School Graduation

	Group	
	STC	Non-STC
Two Year College	49.5%	40.4%
Four Year College	32.7%	36.2%
Technical Training/Trade School	2.0%	3.2%
Registered Apprenticeship Program	1.0%	1.1%
Total Enrollment Rate	85.2%	80.9%

Similar to the findings concerning plans for post-secondary education, it does not appear that program participants are at a disadvantage when considering enrollment patterns. Two-year colleges are the destination of choice for graduates from both groups. Although there is a greater concentration of STC graduates enrolled in two-year colleges than non-STC graduates, the proportions enrolled in four-year colleges are comparable. The distribution shows no signs of a steering effect as there are similar proportions in both samples enrolled in technical training/trade schools and apprenticeship programs. Concerns that participation in a STC program will curtail the academic careers of its participants are not supported by our data as graduates of the program have a higher enrollment rate than the comparison group. Taken together, the educational plans and enrollment patterns of the graduates show that the importance of academic training in the careers of the STC participants is not compromised. STC participants have loftier educational plans and have a higher enrollment rate six months after graduation.

Do the career goals of STC participants reflect the industry sponsoring the program?

Although not perfect predictors of the actual jobs they will hold later in life, students' career goals upon completion of high school provide a window into the kind of careers they envision for themselves. While we find only a few differences with respect to educational plans and enrollment rates, we are interested in the types of careers to which these educational trajectories eventually lead. To assess whether there is a relationship between career plans and STC program participation, we analyzed a set of questions from the baseline survey that inquired about career goals. Specifically, we asked students if their career goals were related to the automotive industry. Results from this question are presented in Table 4.

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Table 4
Goal Relates to the Automotive Industry

	Group	
	STC	Non-STC
Yes	33.0%	8.6%
No	31.0%	71.0%
Not Sure	36.0%	20.4%
n	100	93

If the concern is that students who participate in STC programs will aspire to work in the industry of the sponsor, the evidence from this question is mixed. Indeed, STC graduates are almost four times more likely to have a career goal that relates to the automotive industry than those who did not participate in the program. However, given that the program was aimed at career preparation for the automotive industry *and* that students applied to participate in the program based on pre-existing interest, that only one-third plan on working in the automotive industry seems to us to be rather low. Although this suggests that the program may have had a steering effect towards the automotive industry for some students, it does not mean that they are pigeonholed into a type of job or even into the production sector within the industry. While their goals may relate to the automotive industry, they may not necessarily relate to manufacturing production. To further investigate this, we looked at a question that asked the respondents to write out their career goal. We then classified their responses by occupational type. Percentages of both *total* samples as well as frequencies of *only* those who reported having a goal related to the automotive industry are presented in Table 5.

The majority of graduates from both samples aspire to be professionals.[2] The second largest category for both groups was "undecided," followed by "manager/business." If graduates of a STC initiative were being steered toward careers in automotive production, we would expect there to be large proportions reporting career goals as either being craftsmen, operatives, or non-farm laborers. This, however, is not the case. The groups were comparable with respect to these three categories. 8.9% of the STC sample and 7.4% of the non-STC noted a desire to become a

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Table 5
Occupational Classification of Career Goals

	% of Total Sample		# of 'Automotive Goal-Oriented'	
	Group		Group	
Occupational Type	STC	Non-STC	STC	Non-STC
Professional	33.7%	25.5%	19	4
Education	3.0%	8.5%	-	-
Doctor	5.0%	3.2%	-	-
Health Care	5.0%	3.2%	-	-
Law	3.0%	4.3%	-	-
Manager/Business	10.9%	9.6%	3	1
Official	1.0%	3.2%	-	-
Clerical	0.0%	2.1%	-	-
Craftsmen	8.9%	7.4%	6	-
Operatives	1.0%	0.0%	1	2
Service	5.0%	6.4%	-	-
Non-Farm Laborers	1.0%	0.0%	-	-
Military	2.0%	0.0%	-	-
"General Success"	5.0%	8.5%	1	-
Undecided	15.8%	18.1%	3	1
n	101	94	33	8

craftsman. No one in the non-STC sample wished to be an operative or a non-farm laborer while only 1% of the STC category reported them as their career goals.

Although a larger proportion of STC participants reported that their career goal involved the automotive industry, they are not necessarily seeking careers in manufacturing production per se. Out of the 33 'automotive goal-oriented' STC graduates, 22 of them reported a desire to have a professional or manager/business position within the industry while only seven reported wanting to be a craftsman or an operative. This suggests that their goals, although in the realm of the automotive industry, are not solely production focused. This should assuage the fear that occupational training promotes occupational tracking: the majority of all students aspire to professional careers and STC program graduates, who were intensely exposed to the automotive shop floor, are no different.

Are graduates of a STC program steered into the company/industry that sponsored it?

One of the biggest concerns of STC opponents is that by allowing businesses to influence the school curriculum, local labor market needs will dictate the career paths of the students. That is, students' participation in a STC program will link them to a specific industry and consequently nullify their opportunities to explore other occupations. If this is true, we would expect greater proportions of our STC sample to be employed at the program sponsor or in the industry of the program sponsor. To examine this issue, we looked at two questions asked of both samples in the six-month follow up interview. The first question asked the respondents the name of their current employer. We then tallied the number of respondents who reported working for the sponsoring company. The second question asked the respondents if their current job was related to the automotive industry. Results from both questions are shown in Table 6. Percentages reflect only those who reported being employed.[3]

Table 6
Employment Status: Six Months After High School Graduation

	Group	
	STC	Non-STC
Employed at Program Sponsor		
Yes	13.0%	0.0%
No	87.0%	100.0%
Employed in the Automotive Industry		
Yes	20.8%	11.6%
No	79.2%	88.4%
n	77	69

Clearly, the vast majority of the STC sample (87%) were not employed at the sponsoring company following graduation. Although the 13% employment rate at the sponsoring company contrasts sharply with the 0% of the non-STC sample, it is commensurate with the percentage of the overall community (10.2%) that are employed there. It is not too surprising that none of the non-STC sample are employed by the program sponsor given, that only 8.6% of them aspire to a career related to the automotive industry and that it has become increasingly difficult to get hired at the sponsoring company.[4] The STC participants' contact with staff and personnel most likely

served as links to positions in the company. When looking at the likelihood of employment in the automotive industry more broadly, STC graduates are almost twice as likely to be working in the industry than their non-STC counterparts. This is commensurate with the 14.4% of the working adults in their community who are employed in the manufacturing industry. However, given the automotive focus of the program, that only 16 of 101 students are employed in the industry is surprisingly low.

These figures indicate that STC graduates may have a greater propensity to find work in the automotive industry, but are they being steered into employment at the program sponsor and compromising other career options? Although some may be tempted to make that claim, we caution that these employment figures provide only a snapshot of an intricate and transient time in the lives of young adults. The volatility of the youth labor market and the fact that the graduates are fresh out of high school precludes us from making firm conclusions. For instance, the majority of both groups employed in the automotive industry are simultaneously enrolled in college or a post-secondary training program and aspire to a bachelor's degree or better – which is similar to the enrollment rates and plans of both samples in the aggregate. Many of these workers may be only temporarily employed while pursuing college degrees or they may be working these jobs while deciding which career path they would like to pursue. It is important to keep in mind that the respondents are only six months out of high school and that job turnover is highest for this age group (Ryscavage, 1997). Because this is such an ephemeral time in the lives of young adults, drawing conclusions about labor force outcomes from cross sectional data can be misleading. While we too are restricted in this respect, our data indicate that STC graduates are not limiting themselves with respect to work and education. Involvement in the STC program most likely helped the graduates to obtain a position in the automotive industry following graduation (which is evidence of the positive role of social networking that stems from school-business linkages), but that employment in the automotive industry is not necessarily their final career destination.[5]

Are participants of STC programs better prepared for the transition to adulthood?

One of the key arguments put forth by STC proponents is that participation in occupational training is essential for preparing students for the challenges and responsibilities faced during the school-to-work transition. Since part of the STWOA's mission was to prepare

all students for life post-high school, regardless of academic orientation, we would anticipate that STC graduates would have smoother transitions into their early adult years. In order to gauge if participation in the program prepared students for this pivotal time in the life course, we asked them: "Using a scale of 1 to 10 with 1 being 'not helpful at all' and 10 being 'very helpful,' how helpful were your experiences throughout your last year of high school in preparing you for the following items." The respondents then had to rate their degree of preparation on seven measures. To test if there were significant differences between the groups on this scale, we employed paired sample hypotheses tests. This method assesses whether differences between matched pairs (i.e. the STC graduate and the matched counterpart in the non-STC sample) on a given item are significantly different from zero. Overall group means and test results are shown in Table 7.

Table 7
Means and Paired Sample Hypothesis Test Results; Utility of Senior Year of High School
"Last year of high school was helpful in preparation for..."

	Group			
	STC	Non-STC	t	df
Getting into college*	7.44	6.71	2.23	84
Getting a job**	7.63	6.27	3.79	83
Knowing how to act at work**	8.36	6.83	4.64	88
Asking questions/solving a problem*	8.92	8.68	2.25	88
Making decisions in your personal life*	7.33	6.73	2.13	88
Making education and training decisions**	8.06	7.15	3.63	88
Making career decisions**	8.16	7.08	3.92	88

Note. *p<.05 **p<.01

On all seven items, the means for the STC sample are higher than the means for the non-STC sample and the differences between the matched pairs are significantly different from zero. Most notable is that while the samples were matched along key demographic characteristics with the only educational difference being participation in a STC program during their senior year, the STC graduates were more likely to report that the experiences of their senior year were useful in preparing them for the transition. These findings indicate that regardless of whether graduates pursue further education or enter the world of work, participating in a STC program is beneficial in making transitions and decisions during a critical time in the lives of young adults.

DISCUSSION

Stemming from the debates between John Dewey and David Snedden in the early 20th century (Hyslop-Margison, 2001), discourse over the purpose of and need for integrating workforce skills into the classroom has largely hinged on the question of 'who benefits?' As noted earlier, the critics of the STC movement claim that local labor market needs dominate over equal and fair access to educational opportunities and that educational attainment and career plans are squelched in the process. While examining if STC programs are a significant benefit to local industry is beyond the scope of this paper, we do provide empirical evidence that participating in a STC program neither 'tracks' nor limits the educational and career plans of its graduates. Rather, our analyses reveal that STC graduates benefit from the experience via higher enrollment rates, higher educational expectations, and reports of being better prepared for the transition to young adulthood.

In some respects, claims from both sides of the debate are supported. Opponents of STC can point out that graduates from the STC program are more likely to report having a career goal that is related to the automotive industry and are more likely to be employed in the automotive industry six months after graduation. At first glance, it does appear that involvement in the program prepares students for a career in a specific industry (in this case automotive manufacturing) and that the industry benefits by having a supply of workers already trained for the job. However, it is important to remember that selectivity into the program may be producing the differences between the groups, not the program itself. Critics who claim that participation in STC programs removes individual autonomy need to keep in mind that students who already have an interest in pursuing a manufacturing career are more likely to apply to a STC program that focuses on manufacturing. Indeed, these students went through an application process prior to admission. Because we could not randomly select students into either the STC or the non-STC sample, we caution that interpretations of our results may reflect underlying pre-existing differences between the samples.

With respect to the evidence that supports STC opponents, a careful consideration of other indicators such as the students' educational plans, enrollment patterns, and career goals, as well as the community within which the schools are situated, illustrate a scenario that is more complex than any single indicator taken alone. Most of the STC graduates who are working in the automotive industry are also enrolled in college and plan on attaining a bachelor's degree. It

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is likely that their jobs are temporary as they pursue their degree. In other words, working in the industry may be a financial means to an educational end. The social networks that were established as well as the skills acquired through the program most likely enabled them to find employment quickly out of high school. Additionally, attachment to the sponsoring company benefits working students in that their hourly wages are greater than those of non-STC students.[6]

That a large number of STC graduates envision a career in automotive manufacturing is not unusual given that they were raised in a community where a sizable proportion of the adult population is employed in the industry. What is promising is that they are just as likely to aspire to professional careers as their non-STC counterparts and overall have higher educational expectations. Their orientation to the automotive industry could be a reflection of the community in which they were raised. Their educational and career plans, on the other hand, indicate a desire for professional careers, rather than production line work.

Our analysis only scratches the surface with respect to the hundreds of STC projects stemming from the passage of the STWOA. Graduates of the program are only recently out of high school and their careers are only in their infant stages. We plan to continue to track these cohorts for several more years. Our research focused on an initiative that took place during the final year of high school. Different findings could stem from programs that intervene earlier in the academic careers of students. Further research is needed to examine the scope of STC projects and their influence on the career trajectories of graduates. Particular attention needs to be paid to the industry type of the sponsoring company as well as the labor market in which the school is nested. Longitudinal designs, like the one employed here, would be most useful.

At the turn of the 20th century, a major educational focus was the skill mismatch between the traditional curriculum of the schools and the newly emerging industrial economy. In many ways, the same issues face educational reform today as we confront a global economy that is driven by information technology. As young adults navigate their way into a labor market that requires advanced training and specialized skills, higher education and career preparation are as important as ever. Our findings suggest that initiatives aimed at bridging the gap between the classroom and the workplace are not misguided. We find no evidence that these types of policies in any way harm the post-secondary plans and early attainments of students. In fact, the results favor this type of school-business partnership. Policies that support STC programs should be

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encouraged but should remain flexible in their content to prepare students for STC transitions in general and in a variety of career paths.

NOTES

[1]Although the sponsoring company is committed to increasing the educational capital of its workers and to developing production line positions which increasingly require a four year degree, the U.S. Census Bureau's Current Population Survey (2000) shows that 78.8% of employees in the manufacturing industry have a two year degree or less and that 95.6% of machine operators, assemblers, and inspectors hold a two year degree or less.

[2] This category included job types such as engineering, math, computer science, architecture, and communication.

[3] Percentages employed six months after high school graduation were comparable between the two groups: STC 76.2%; non-STC 73%.

[4] In addition to low hiring rates at local facilities, employees must also pass rigorous new hire assessments.

[5] Of the 10 who are employed at the sponsoring company, 7 are enrolled in post-secondary education.

[6] In an analysis not presented in this paper, STC graduates have been found to have significantly higher hourly pay rates than the non-STC sample. The difference in the pay rates is partly explained by the higher wages received by those working for the program sponsor.

REFERENCES

Arum, R., & Shavitt, Y. (1995). Secondary vocational education and the transition from school to work. *Sociology of Education, 68, 187-204.*

Bishop, J., Mane, F., & Ruiz-Quintilla, A. (2000*). Who participates in school-to-work programs? Initial tabulations*. Ithaca, NY: Bishop Associates.

Cutshall, S. (2001). School-to-Work: Has it worked? *Techniques: Connecting Education and Careers. 76 (1), 18.*

Halperin, S. (1994). *School-to-Work: A larger vision*. Washington, DC: American Youth Policy Forum.

Hanser, L., & Stasz, C. (1999, April). *The effects of enrollment in the transportation career academy program on student outcomes*. Paper prepared for the meeting of the American Educational Research Association, Santa Monica, CA: RAND.

Hershey, A.M., Silverberg, M.K., & Haimson, J. (1997). *Expanding options for students: Report to Congress on the national evaluation of school-to-work implementation*. Princeton, NJ: Mathematica Policy Research, Inc.

Hughes, K.L., Bailey, T.W., & Mechur, M.J. (2001). *School-to-Work: Making a difference in education*. New York, NY: Institute on Education and the Economy, Teachers College, Columbia University.

Hyslop-Margison, E. (2001). An assessment of the historical arguments in vocational education reform. *Journal of Career and Technical Education, 17 (1)*.

Jobs for the Future. (n.d.). *School-to-Career initiative demonstrates promising student results*. Boston, MA: Author.

Kelsh, T. (1998). *New York state school-to-work initiative demonstrates promising student results*. New York, NY: Westchester Institute for Human Services Research, Inc.

Kemple, J.J., & Snipes, J.C. (2000). *Career academies: Impacts on students' engagement and performance in high school*. New York, NY: Manpower Demonstration Research Corporation.

Kerckhoff, A.C., & Bell, L. (1998). Hidden capital: Vocational credentials and attainment in the United States. *Sociology of Education, 71(2), 152-174*.

Lewis, M.V. (1997). *Characteristics of successful school-to-work initiatives: What the research says*. (Information Series No. 370). Columbus, OH: Center on Education and Training for Employment.

Lewis, T., Stone, J., Shipley, W., & Madzar, S. (1998). The transition from school-to-work: An examination of the literature. *Youth and Society, 29 (3), 259-292*.

Maxwell, N., & Rubin, V. (2000). *Career academy programs in California: Implementation and student outcomes*. Hayward, CA: Human Investment Research and Education Center.

Medrich, E., Beltranena, R., & White, R. (2001). *School-to-Work progress measures: A report to the National School-to-Work Office*. Berkeley, CA: MPR Associates/Academy for Educational Development.

Metis Associates. (1999). *Evaluation of the North Carolina JobReady initiative: 1998 Graduate follow-up survey*. Albany, NY: Author.

Miller, V. (2001). *The new definition of standards in American education*. Washington, DC: The Heritage Foundation.

MPR Associates. (1998). *School-to-Work progress measures: A report to the National School-to-Work Office for July 1, 1996-June 30, 1997*. Berkeley, CA: Author.

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National Center for Education Statistics. (1996). *Vocational education in the United States: The early 1990s.* NCES Report 97-391. Washington, DC: Department of Education.

National Commission on Excellence in Education. (1983*). A nation at risk: The imperative for educational reform.* Washington, DC: Government Printing Office.

National School-to-Work Learning and Information Center. (1999). *School-to-Work.* Available: http://www.stw.ed.gov/general/whatis.htm

Oakes, J. (1985). *Keeping track: How schools structure inequality.* New Haven, CT: Yale University.

Parnell, D. (1985). *The neglected majority.* Washington, DC: Community College Press.

Patterson, C. (1999). *Design for mediocrity: A report on current reforms in Texas public schools.* San Antonio, TX: Texas Public Policy Foundation. Available: http://www.tppf.org

Ryscavage, P. (1997). *Dynamics of economic well-being: Labor force and income, 1991-1993.* Current Population Reports, Household Economic Studies, P70. Washington, DC: Bureau of the Census.

United States 103rd Congress. (1994). *The School-to-Work Opportunities Act.* P.L. 103-239. Washington, DC: Author.

United States Bureau of the Census. (1990). Data available: http://www.census.gov

United States Bureau of the Census. (2000). Current Population Survey. Data available: http://www.census.gov

United States Department of Labor. (1992). *Learning a living: A blueprint for high performance.* Secretary's Commission on Achieving Necessary Skills. Washington, DC: Author.

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